Science > Cancer

Popular Acne Treatments Used by Millions of Teens Contain High Levels of Chemical Linked to Leukemia

Tests Commissioned by Children's Health Defense U.S. Food and Drug Administration to recall popular acne treatments and issue consumer warnings after testing showed the medications contained "unacceptably high" levels of benzene

By Brenda Baletti, Ph.D.

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High levels of benzene, a chemical linked to cancer, can form in many popular acne treatments containing benzoyl peroxide, according to a new report by independent testing laboratory Valisure.

Valisure tested dozens of prescription and over-the-counter acne products, including Clearasil, Walgreens, CVS, Target, Equate, Up & Up and Proactiv. It found they can contain "unacceptably high" levels of benzene.

Testing also revealed that benzene levels increase when the products are heated or stored in warm conditions — such as left in a hot car or stored in a steamy bathroom.

The FDA has filed a Citizen Petition with the U.S. Food and Drug Administration (FDA), sharing the results of its analysis and asking the FDA to recall products and suspend their sales while regulators investigate the risks from benzene.

Acne is one of the most common skin conditions in the U.S., affecting up to 50 million people at any given time.

Bloomberg reported that sales of over the counter U.S. acne treatments totaled $1 billion last year.

Acne medications containing benzoyl peroxide, such as those tested, also come with benzene, are commonly recommended by dermatologists and health websites, such as the American Academy of Dermatology.

The American Academy of Dermatology guidelines strongly recommend benzoyl peroxide for treating acne topically.

Benzene, long known to be carcinogenic, is a popular chemical solvent manufactured in the U.S. and used in products such as paints, glues and rubber and primarily in substances ranging from cleaning products to pesticides and gasoline, the Environmental Protection Agency says.

According to the World Health Organization, "there's no safe level" of exposure to benzene in the air or groundwater.

Valisure is petitioning the manufacturers becoming over time can lead to leukemia and other blood disorders, according to the FDA.

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"Valisure, a New Haven, Conn.-based testing laboratory, had a petition with the Centers for Disease Control and Prevention which said that it tested 175 different products and found benzene contamination in 31 of them."
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Valisure tested 84 benzoyl peroxide products, including creams, lotions, gels, washes, liquids and bars.

FDA guidance allow up to two parts per million of benzene. Several of the products tested showed benzene levels well above two parts per million. Those products were then tested by a third party laboratory to confirm the results. Valisure then submitted a citizen petition requesting the FDA to replicate the experiments in which they might be transported or stored.

Christopher Bunick, M.D., Ph.D., associate professor of dermatology at the Yale University School of Medicine and physician-scientist at Yale Dermatology, told The Defender that benzoyl peroxide is susceptible to free radicals — which cause it to break down into different chemicals, including benzene when exposed to heat.

Among products with the highest benzene levels were Proactiv's 2.5% benzoyl peroxide Repairing Lotion, followed by Sun Pharmaceuticals, which contained 0.15% benzene in its acne wash.

Target's Up & Up 2.5% benzoyl cream had 1,000 parts per million. Stiefel Laboratory's Clinpro 2.5% benzoyl peroxide cream had 401 parts per million. Beiersdorf Inc.'s Aquaphor 10% benzoyl peroxide cream had 338 parts per million. Walgreens' 10% benzoyl peroxide cream had 114 parts per million.

The labs also found high levels of benzene in a La Roche-Posay's benzoyl peroxide cream, Sanofi-Aven's benzoyl peroxide lotion, Neutrogena's benzoyl peroxide gel and CeraVe's benzoyl peroxide cream and many others.

Valisure's petition also requests that the FDA require the manufacturers to test for benzene. Bloomberg reported, although the patents have not yet been granted.

The labs have found high levels of benzene in products the FDA pulled from the market in 2020 after the lab notified the agency that the drug's key ingredient, ranitidine, could expose people to a carcinogen, substance called N-Nitrosodimethylamine. Another lab, Emery Pharma, confirmed the findings.

Valisure's fight has a potent applicant pending on fundamental per- Bunick said, citing several reasons.

"First, manufacturers must maintain certain quality and safety standards as mandated by the FDA. Current benzoyl peroxide products do not meet these standards, especially with regards to stability over time and temperature.

"Second, benzene is a known carcinogen and leukemogen. There is no safe level of exposure to benzene, and the cancer causing effect may take decades to manifest. Third, benzoyl peroxide products are commonly used by children and youth potentially lead to skin cancers in adulthood, sometimes 20-40 years after exposure.

Lastly, a new report out of the U.K. showed that benzene is present in the air we breathe, which is less than what is seen in many benzoyl peroxide products increased risk of all acne vulgaris, cardiovascular disease and multiple cancers, including hematologic and lung."

Valisure also tested products containing other ingredients, such as salicylic acid or clindamin. Those products had benzene levels were either undetectable or below the FDA's current limit of 2 parts per million, the lab reported in its petition. Some of the products containing benzoyl peroxide had benzene levels of 2 parts per million.

The FDA, Eadie Laude and Reckitt did not immediately respond to The Defender's requests for comment.

An FDA spokesperson confirmed in a statement Wednesday and reported by CNN that the agency had received the petition and would review it.

"Such data must be verified as accurate and reproducible before it can be utilized to make regulatory decisions such as recommending product sale suspensions and recalls," the statement said.

Valisure's right has a patent application pending on formulations per- Bunick said, citing several reasons.

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